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EXAMINER

NGUYEN, TOAN D

ART UNIT PAPER NUMBER

2665

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/666,298

Applicant(s)

HAARTSEN, JACOBUS C.

Examiner

Toan D Nguyen

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18 is/are allowed.
- 6) ☒ Claim(s) 19-21, 24, 27-29 and 32 is/are rejected.
- 7) ☒ Claim(s) 22, 23, 26, 30, 31 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 19 line 4, recites the limitation "the fast frequency hopping traffic channel" lack clear antecedent basis.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkioja et al (US 5,774,808) in view of Bird (US 6,519,245).

For claim 19, Sarkioja et al disclose method for channel allocation in a cellular communication system, the method comprising the steps of:

establishing a frequency hopping traffic channel between a first and a second communication unit (figure 3, reference TRX2-TRX4, col. 3 lines 20-21 and col. 4 lines 34-37), having a set of the plurality of time slots (figure 3, col. 3 lines 20-24) and a first set of hop carrier frequencies within the frequency spectrum (figure , col. 3 lines 38-42); and
establishing a static traffic channel between a third and a fourth communication unit (figure 3, reference TRX1, col. 3 lines 17-20 and col. 4 lines 29-34), the static traffic channel

Art Unit: 2665

(figure 3, reference TRX1) having a carrier frequency within the frequency spectrum (col. 3 lines 42-44). However, Sarkioja et al do not disclose a fast frequency hopping traffic channel. In an analogous art, Bird discloses the fast frequency hopping traffic channel (col. 3 line 30).

One skilled in the art would have recognized a fast frequency hopping traffic channel to use the teachings of Bird in the system of Sarkioja et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the fast frequency hopping traffic channel as taught by Bird in Sarkioja et al's system with the motivation being to provide other types of channels, such as fast frequency hopping where each time slot has a frequency hop pattern, slow or fast phase code modulation, time division, or the like could be used (col. 3 lines 29-32).

4. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkioja et al (US 5,774,808) in view of Bird (US 6,519,245) further in view of Ishifuji et al (US 6,061,389).

For claims 20 and 21, Sarkioja et al in view of Bird do not disclose the step of communicating one or more first data packets on one or more of the set of the plurality of time slots from the first communication unit to the second communication unit over the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s. In an analogous art, Ishifuji et al. disclose the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s (col. 2 lines 23-28). Ishifuji et al. disclose further the step of communicating one or more first data packets from the third communication unit to the fourth communication unit over the static traffic channel at a rate exceeding 5 Mb/s (col. 2 lines 23-28 as set forth in claim 21).

Art Unit: 2665

One skilled in the art would have recognized the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s to use the teachings of Ishifuji et al. in the system of Bird. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the fast frequency hopping traffic channel at a rate of between 1-3 Mb/s as taught by Ishifuji et al. in Bird's system with the motivation being arranged so that one hop occurs within some symbols (col. 2 lines 23-26).

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarkioja et al (US 5,774,808) in view of Bird (US 6,519,245) further in view of Trompower et al (US 6,088,591).

For claim 24, Sarkioja et al in view of Bird disclose further comprising the steps of: establishing the frequency hopping traffic channel between the first, the second, and the third communication unit (figure 3, reference TRX2-TRX4, col. 3 lines 20-21 and col. 4 lines 34-37). However, Sarkioja et al in view of Bird do not disclose wherein a beacon packet is transmitted to the third communication unit, the beacon packet associated with the frequency hopping traffic channel. In an analogous art, Trompower et al disclose wherein a beacon packet is transmitted to the third communication unit, the beacon packet associated with the frequency hopping traffic channel (col. 4 lines 38-39).

One skilled in the art would have recognized a beacon packet is transmitted to use the teachings of Trompower et al in the system of Sarkioja et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the beacon packet is transmitted as taught by Trompower et al in Sarkioja et al's system with the motivation being to allow for signal quality evaluation (col. 4 lines 40-41).

Art Unit: 2665

6. Claims 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Poyhonen (US 5,570,352) in view of Sarkioja et al (US 5,774,808).

For claim 27, Poyhonen discloses digital cellular network/system with mobile stations communicating with base stations using frequency-hopping and having enhanced effect of interference diversity, the apparatus comprising:

an air interface (figure 1, col. 3 lines 44-47); and

a first, second, third, and fourth communication unit coupled together over an air interface (figure 1, references 11 and 12) (col. 3 lines 44-53).

However, Poyhonen do not disclose the first communication unit is configured to:

establish a frequency hopping traffic channel between the first and the second communication unit, the frequency hopping traffic channel having a set of the plurality of time slots and a first set of hop carrier frequencies within the frequency spectrum; and

establish a static traffic channel between the third and the fourth communication unit, the static traffic channel having a carrier frequency within the frequency spectrum.

In an analogous art, Sarkioja et al disclose the first communication unit is configured to:

establishing a frequency hopping traffic channel between a first and a second communication unit (figure 3, reference TRX2-TRX4, col. 3 lines 20-21 and col. 4 lines 34-37), having a set of the plurality of time slots (figure 3, col. 3 lines 20-24) and a first set of hop carrier frequencies within the frequency spectrum (figure , col. 3 lines 38-42); and

establishing a static traffic channel between a third and a fourth communication unit (figure 3, reference TRX1, col. 3 lines 17-20 and col. 4 lines 29-34), the static traffic channel

Art Unit: 2665

(figure 3, reference TRX1) having a carrier frequency within the frequency spectrum (col. 3 lines 42-44).

One skilled in the art would have recognized establishing a frequency hopping traffic channel between a first and a second communication unit to use the teachings of Sarkioja et al in the system of Poyhonen. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the establishing a frequency hopping traffic channel between a first and a second communication unit as taught by Sarkioja et al in Poyhonen's system with the motivation being to provide a method for allocating radio channel in a cellular communication system (Abstract lines 1-2).

7. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poyhonen (US 5,570,352) in view of Sarkioja et al (US 5,774,808) further in view of Ishifuji et al (US 6,061,389).

For claims 28 and 29, Poyhonen in view of Sarkioja et al does not disclose wherein the first communication unit is further configured to communicate one or more first data packets on one or more of the first set of the plurality of time slots from the first communication unit to the second communication unit over the frequency hopping traffic channel at a rate of between 1-3 Mb/s.

In an analogous art, Ishifuji et al disclose wherein the first communication unit is further configured to communicate one or more first data packets on one or more of the first set of the plurality of time slots from the first communication unit to the second communication unit over the frequency hopping traffic channel at a rate of between 1-3 Mb/s (col. 2 lines 23-28). Ishifuji et al disclose wherein the third communication unit is further configured to communicate one or

Art Unit: 2665

more first data packets from the third communication unit to the fourth communication unit over the static traffic channel at a rate exceeding 5 Mb/s (col. 2 lines 23-28 as set forth in claim 29).

One skilled in the art would have recognized the frequency hopping traffic channel at a rate of between 1-3 Mb/s to use the teachings of Ishifuji et al. in the system of Bird. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the frequency hopping traffic channel at a rate of between 1-3 Mb/s as taught by Ishifuji et al. in Bird's system with the motivation being arranged so that one hop occurs within some symbols (col. 2 lines 23-26).

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Poyhonen (US 5,570,352) in view of Sarkioja et al (US 5,774,808) further in view of Trompower et al (US 6,088,591).

For claim 32, Poyhonen does not disclose establishing the frequency hopping traffic channel between the first, the second, and the third communication unit; and

wherein a beacon packet is transmitted to the third communication unit, the beacon packet associated with the frequency hopping traffic channel.

In an analogous art, Sarkioja et al disclose the steps of:

establishing the frequency hopping traffic channel between the first, the second, and the third communication unit (figure 3, reference TRX2-TRX4, col. 3 lines 20-21 and col. 4 lines 34-37).

However, Poyhonen in view of Sarkioja et al does not disclose wherein a beacon packet is transmitted to the third communication unit, the beacon packet associated with the frequency hopping traffic channel. In an analogous art, Trompower et al disclose wherein a beacon packet

Art Unit: 2665

is transmitted to the third communication unit, the beacon packet associated with the frequency hopping traffic channel (col. 4 lines 38-39).

One skilled in the art would have recognized a beacon packet is transmitted to use the teachings of Trompower et al in the system of Poyhonen. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the beacon packet is transmitted as taught by Trompower et al in Poyhonen's system with the motivation being to allow for signal quality evaluation (col. 4 lines 40-41).

Response to Arguments

9. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

10. Claims 22-23, 26, 30-31 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 1-18 are allowed.

Regarding claims 1 and 10, the prior art fails to teach a combination of the steps of:
establishing a fast frequency hopping traffic channel between a first and a second communication unit, the fast frequency hopping traffic channel having a set of the plurality of time slots and a first set of hop carrier frequencies within the frequency spectrum; and
establishing a slow frequency hopping traffic channel between a third and a fourth communication unit, the slow frequency hopping traffic channel having a second set of hop

Art Unit: 2665

carrier frequencies within the frequency spectrum, in the specific combination as recited in the claims.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D Nguyen whose telephone number is 703-305-0140. The examiner can normally be reached on Monday- Friday (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 703-308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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STEVEN NGUYEN
PRIMARY EXAMINER